Ministry of
Education and Science
Republic of Latvia

The Latvian R&D&I System and the opportunities arising from synergies

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Outline

1) R&D&I system
2) Roles of core actors
3) RIS3
4) Core R&D performers
5) Excellence Challenge
6) Preconditions of success

The Latvian R&D&I System

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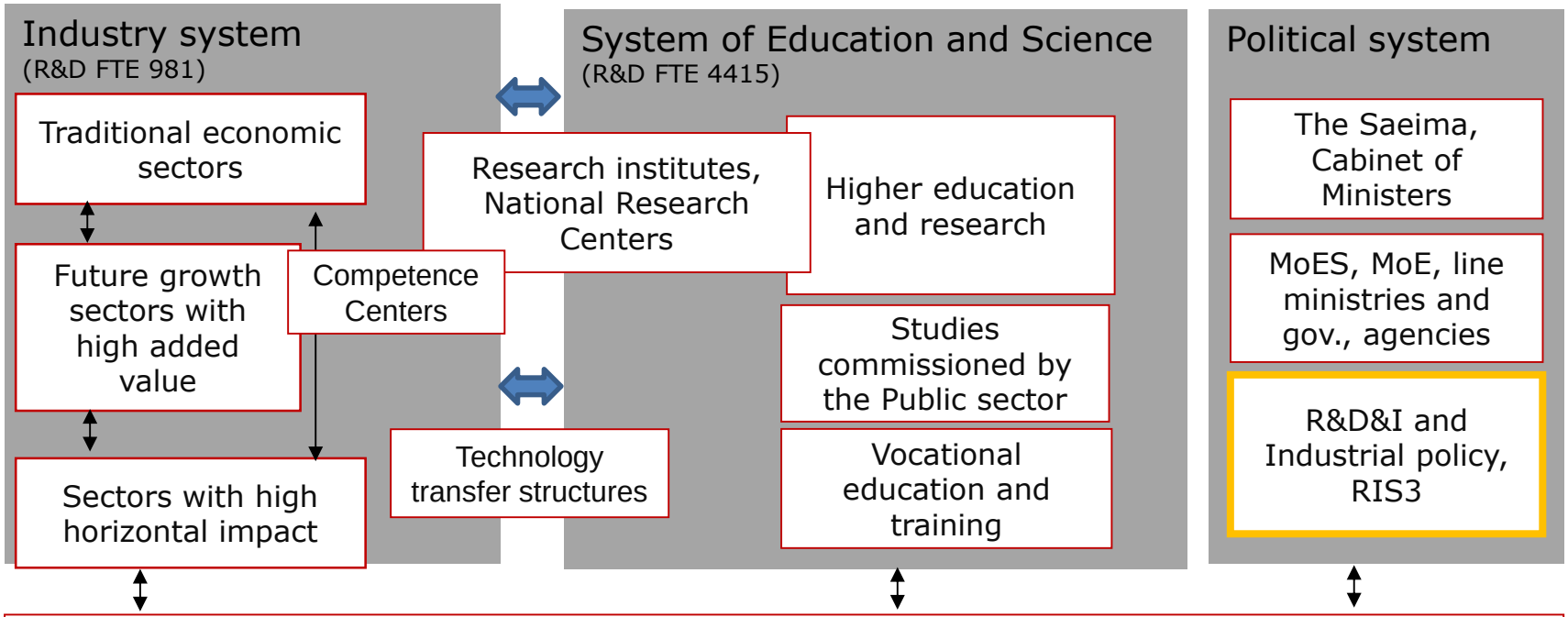
Demand
Consumers (final demand)
Producers (interim demand)

Framework conditions
Financial environment, tax regime, entrepreneurship and innovation incentives, regulatory environment, State aid, mobility



Infrastructure

Banks, venture capital | Information | R&D&I and business support instruments | Research infrastructure | Standards and requirements

Adopted from Erik Arnold and Stefan Kuhlman, *RCN in the Norwegian Research and Innovation System*, Background Report No 12 in the Evaluation of the Research Council of Norway, Oslo: Royal Norwegian Ministry for Education, Research and Church Affairs, 2001

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Roles of core actors Latvian R&D&I System

Role of industry – to innovate (demand side)

Role of Universities – Knowledge Hubs:

- to develop **sufficiently diverse knowledge base** (supply side)
- to **boost innovation capacity** of firms through provision of human capital and access to knowledge (demand side)
- to **generate S&T human capital that is sufficiently embedded and connected** (absorptive capacity)
- **to pool resources across sectors and regions** (innovation ecosystem)**.**

Proven fact - **Public investment** in research **in universities** leads to:
•Economic growth through an **increase in private sector productivity**
•Beneficial economic and societal impacts through **increased interaction between the academic and private sectors**
•**Public investment in research increases** rather than diminishes **private sector investment** (complimentarity)

Role of Research institutes - to develop **relevant knowledge** (supply side)

Role of Government – Enabler – to set structure of incentives, correct market and policy failures

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RIS3 challenge for Latvia: productivity

RIS3 aims *(to correct a policy failure)* **to boost productivity of economy by creating future domestic capabilities and comparative advantage, especially in sectors where small incremental changes can leverage substantial return**

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Latvian RIS3: A "Hybrid Strategy" that aims to increase productivity of economy

Transformation of economy towards higher added value, productivity and more effective usage of resources

Objective: to increase innovation capacity and to create innovation system that promotes growth of economy

Directions:

1. **Structural changes of production and export in the traditional sectors of the economy;**
2. **Growth in sectors where there is or is likely to create products and services with high added value;**
3. **Branches with significant horizontal impact and contribution to economic transformation.**

Priorities:

1. **High added-value products**
2. **Productive Innovation System**
3. **Energy Efficiency**
4. **Modern ICT**
5. **Modern education**
6. **The knowledge base** *(Bio-economy; Biomedicine, medical technologies, biopharmacy and biotechnology; Smart materials, technology and engineering, Smart energy; ICT)*
7. **Polycentric development**

Specialization areas:

1. **Knowledge-based bio-economics**
2. **Bio-medicine, medical technologies, bio-pharmacy and biotechnologies;**
3. **Advanced materials, technologies and engineering systems**
4. **Smart energy**
5. **Information and communication technologies.**

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RIS3 for Latvia: Specialization Areas

Example of Advanced materials, technologies and engineering systems:

Fields and subfields of science with greatest potential for boosting competitiveness of economy

Offer of scientific institutions for specific niche selection: implant materials, composites, thin layers and coatings. Merchants offer - machinery (including electrical equipment), mechanisms and industrial machines.

Industry organizations

Groglass Ltd., JSC Sidrabe, Z-Light Ltd., JSC Jauda, JSC Valmieras stikla šķiedra, JSC Lode

Main research institutes

University of Latvia, Institute of Solid State Physics of University of Latvia, Riga Technical University

Examples of Connectedness

Institute of Solid State Physics: Center of Advanced Materials Research and Technology Transfer (CAMART2) (Horizont2020 WIDESPREAD1-2014:Teaming action)

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RIS3 for Latvia: Specialization Areas

Example of Biomedicine, medical technologies, biopharmacy and biotechnology:

Fields and subfields of science with greatest potential for boosting competitiveness of economy

1) Chemical and biotechnological methods and products for obtaining pharmaceutical and bio-active substances; 2) Research and development of new and existing human and veterinary medicinal products; 3) Molecular and individualized treatment and diagnostic methods and cell technologies; 4) Functional food, medical cosmetics and bioactive natural products.

Industry organizations

JSC Olainfarm, JSC Grindeks, JSC Dzintars, Madara Cosmetics Ltd., Silvanols Ltd., Riga East University Hospital Ltd., Pauls Stradins Clinical University Hospital Ltd.

Main research institutes

University of Latvia, Riga Stradins University, Latvian Institute of Organic Synthesis, Latvian Biomedical Research and Study Centre

Examples of Connectedness

The Latvian Institute of Organic Synthesis: project ENABLE (European Gram Negative Antibacterial Engine) – IMI Program; Latvian Biomedical Research and Study Centre: FP7 project Vector-borne Risks for Europe: Risk assessment and control of West Nile and Chikungunya virus (VECTORIE)

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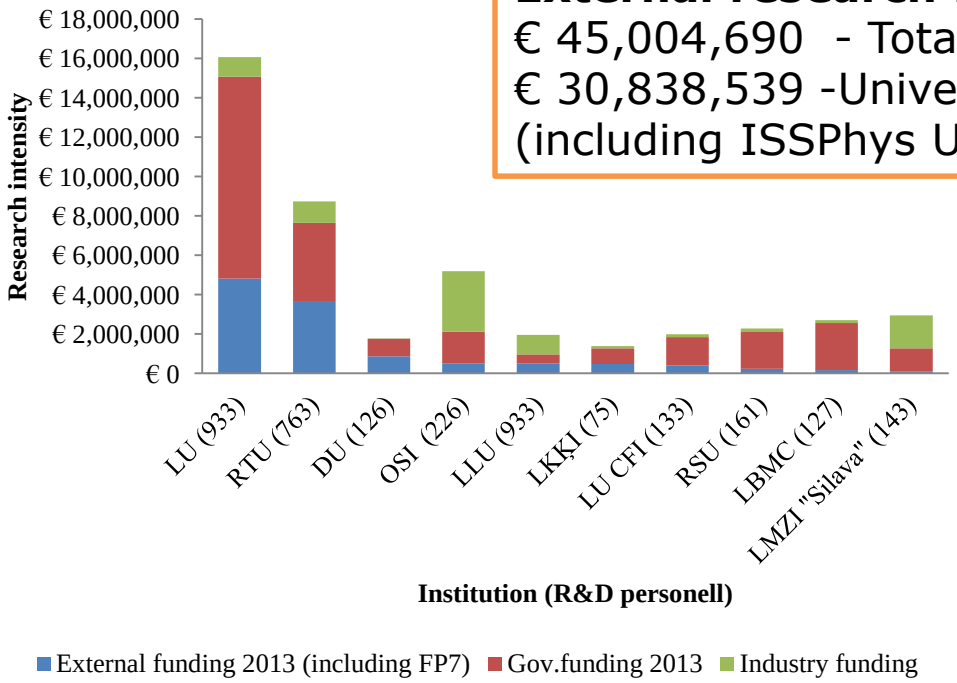
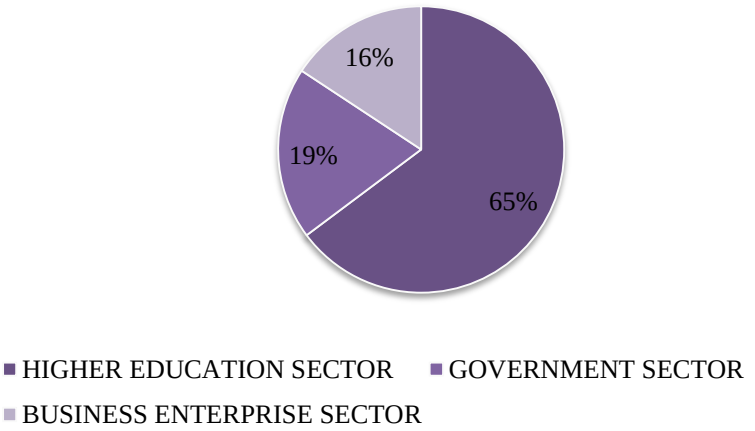
TOP 10 research performers (2013), ordered by total of external research funding

About 70% of research is performed in Universities

External research funding:
€ 45,004,690 - Total
€ 30,838,539 -Universities,
(including ISSPhys UL)



R&D personnel (FTE 5396)



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Excellence Challenge: knowledge base, S&T human capital and infrastructure

Knowledge base

- Sufficiently diverse (to serve five specialization areas)
- Focused and relevant (to ensure competitiveness)

S&T human capital

- Locally embedded (to develop local industry)
- Globally connected (to reach out for opportunities)
- Links across rectors and disciplines (to benefit from cross-fertilization)

Infrastructure

- Serves creation of knowledge base and human capital
- Allows production of relevant knowledge
- Jointly used sectorially, nationally and internationally

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Preconditions of success

1) Research assessment exercise 2012-2013

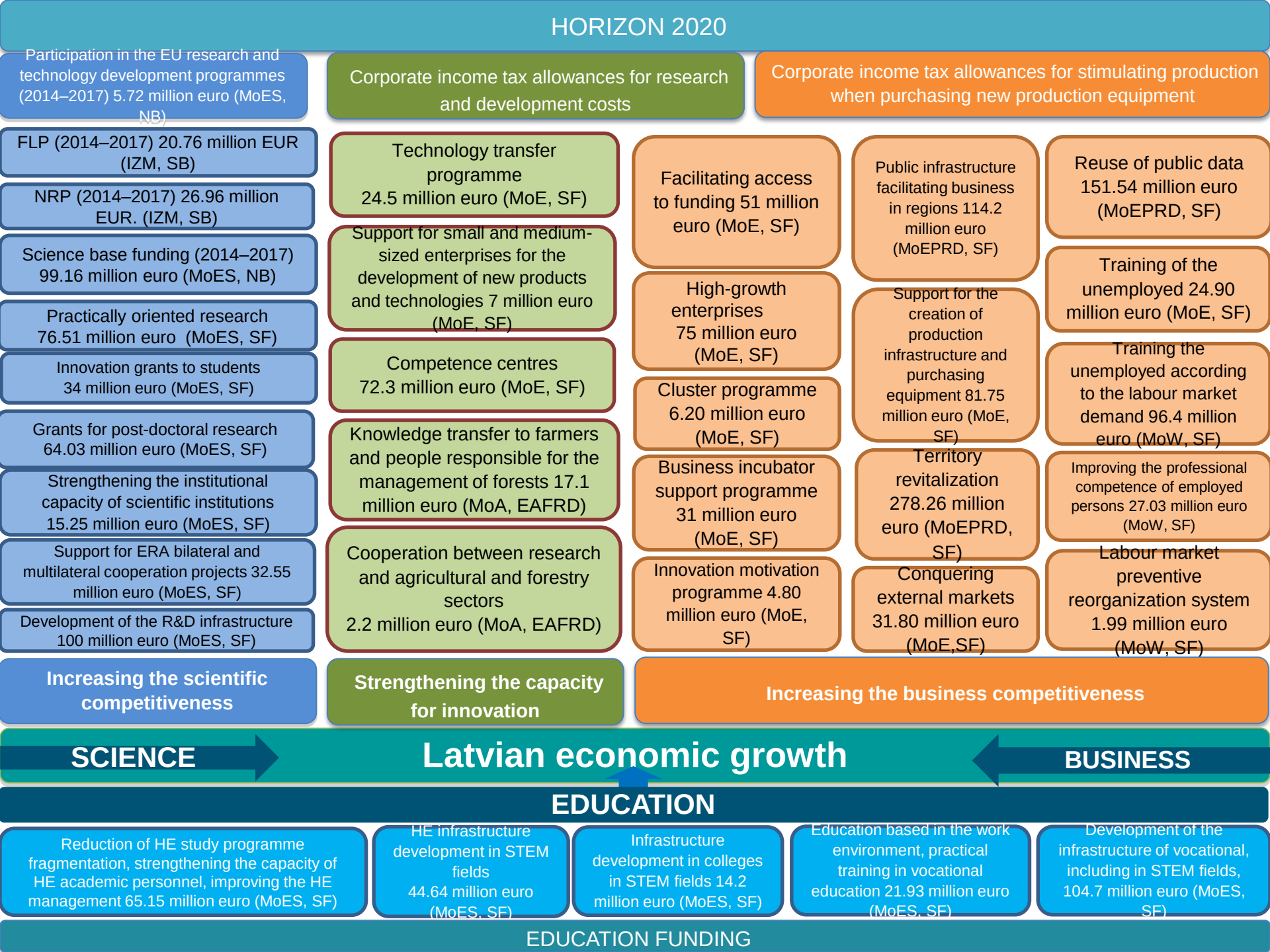
Self-assessment

Peer review , five criteria (quality of research, impact on scientific discipline, economic and social impact, research environment and infrastructure, development potential)

2) Consolidation of R&D resources around best performers 2014-2015

Development of research programs and strategies in public research institutes and universities

3) Enabling and complementary public R&D investments 2014-2020


HORIZON 2020
Participation in the EU research and technology development programmes (2014–2017) 5.72 million euro (MoES, NB)
Corporate income tax allowances for research and development costs
Corporate income tax allowances for stimulating production when purchasing new production equipment
FLP (2014–2017) 20.76 million EUR (IZM, SB)
NRP (2014–2017) 26.96 million EUR. (IZM, SB)
Science base funding (2014–2017) 99.16 million euro (MoES, NB)
Practically oriented research 76.51 million euro (MoES, SF)
Innovation grants to students 34 million euro (MoES, SF)
Grants for post-doctoral research 64.03 million euro (MoES, SF)
Strengthening the institutional capacity of scientific institutions 15.25 million euro (MoES, SF)
Support for ERA bilateral and multilateral cooperation projects 32.55 million euro (MoES, SF)
Development of the R&D infrastructure 100 million euro (MoES, SF)
Technology transfer programme 24.5 million euro (MoE, SF)
Support for small and medium-sized enterprises for the development of new products and technologies 7 million euro (MoE, SF)
Competence centres 72.3 million euro (MoE, SF)
Knowledge transfer to farmers and people responsible for the management of forests 17.1 million euro (MoA, EAFRD)
Cooperation between research and agricultural and forestry sectors 2.2 million euro (MoA, EAFRD)
Facilitating access to funding 51 million euro (MoE, SF)
High-growth enterprises 75 million euro (MoE, SF)
Cluster programme 6.20 million euro (MoE, SF)
Business incubator support programme 31 million euro (MoE, SF)
Innovation motivation programme 4.80 million euro (MoE, SF)
Public infrastructure facilitating business in regions 114.2 million euro (MoEPRD, SF)
Support for the creation of production infrastructure and purchasing equipment 81.75 million euro (MoE, SF)
Territory revitalization 278.26 million euro (MoEPRD, SF)
Conquering external markets 31.80 million euro (MoE,SF)
Reuse of public data 151.54 million euro (MoEPRD, SF)
Training of the unemployed 24.90 million euro (MoE, SF)
Training the unemployed according to the labour market demand 96.4 million euro (MoW, SF)
Improving the professional competence of employed persons 27.03 million euro (MoW, SF)
Labour market preventive reorganization system 1.99 million euro (MoW, SF)
Increasing the scientific competitiveness
Strengthening the capacity for innovation
Increasing the business competitiveness
SCIENCE
Latvian economic growth
BUSINESS
EDUCATION
Reduction of HE study programme fragmentation, strengthening the capacity of HE academic personnel, improving the HE management 65.15 million euro (MoES, SF)
HE infrastructure development in STEM fields 44.64 million euro (MoES, SF)
Infrastructure development in colleges in STEM fields 14.2 million euro (MoES, SF)
Education based in the work environment, practical training in vocational education 21.93 million euro (MoES, SF)
Development of the infrastructure of vocational, including in STEM fields, 104.7 million euro (MoES, SF)
EDUCATION FUNDING

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